REMARKS

Claims 2-10, 15-18, 21, 25-27, 30-38, 71 and 72 are currently pending. Claims 2-10, 15-18, 21, 25-27, 30-38, 71 and 72 stand rejected under 35 U.S.C. §103(a).

Claims 32, 33, 71, and 72 have been amended. The Applicants respectfully traverse the grounds for rejection and requests withdrawal thereof.

Applicants acknowledge the removal of Haugland as a basis for rejection.

SECTION 103(a) REJECTIONS

Claims 2-5, 8, 10, 15-18, 21, 25-27, 30-38, 71, and 72 stand rejected under 35 U.S.C. §103(a) as unpatentable over U.S. Patent Number 4,760,850 to Phillips, et al. ("Phillips") in view of U.S. Patent Number 6,063,046 to Allum ("Allum") and claims 6, 7, and 9 stand rejected under 35 U.S.C. 103(a) as unpatentable over Phillips and Allum, further in view of U.S. Patent Number 6,174,294 to Crabb, et al. ("Crabb"). The Applicants respectfully traverse the grounds for rejection for the following reasons.

2-5, 8, 10, 15-18, 21, 25-27, 30-38, 71, and 72

Independent claims 71 and 72 of the invention as claimed recite a system for balance control during standing and gait of a user. In pertinent part, the system includes a sensing layer that transmits balance information signals corresponding to a two-dimensional force distribution to a remote location; a signal processing subsystem that, in response thereto, generates balance

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control signals for use in user skin stimulation; and an array of stimulators that are adapted to provide skin stimulation to at least one lower body extremity in a form reflecting the two-dimensional force distribution under the user's foot. More specifically, feedback is provided to the user via the stimulators, which is to say, "to provide individualized spatial mapping and temporal information to allow complex, multi-dimensional and time varying corrective action." Thus, the balance information signals result from movement of the lower extremities and the balance control signals are applied to a lower extremity. This feature is not taught, mentioned or suggested by the Phillips.

Indeed, Phillips teaches a system whereby "four-point balancing information" is applied "above the point of spinal cord injury" so that the disabled person can "reposition[] canes 17, 17 and control[] upper body movement." Phillips, col. 3, lines 39-55. Hence, the control signals are applied above the waist of the user and not on his/her lower extremities.

As previously argued, the support platform disclosed by Alum is not "configured for wearing" as required by the claim nor are the "sensors placed under at least one foot". Indeed, the transducers 50 and 54 are disposed at the pitch and roll points. Furthermore, Allum teaches providing "varying electrical signals" to "stimulate the vestibular nerve" in the ear canal. See, e.g., Allum, col. 26, lines 57-58. The vestibular nerve, however, is not a "body surface part" or a "lower extremity" as required by the claims.

With respect to claims 2-4, the present invention includes a two-dimensional array of sensors under each foot that provides

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data on forward-backward (e.g., parallel) and side-to-side (e.g., perpendicular). Phillips neither teaches, mentions or suggest this and, moreover, can only provide forward-backward balance signals when used during gait without crutches. Accordingly, side-to-side balance data in a single stance phase of gait is lacking in Phillips.

Accordingly, the Applicants respectfully assert that the claims 71 and 72 and all claims depending therefrom satisfy 35 U.S.C. § 101, et seq. -- especially § 103(a) -- and are in condition for allowance. Withdrawal of the grounds for rejection is respectfully requested.

Claims 6, 7, and 9

Nor can Crabb make up for the deficiencies of Phillips and/or Allum. Crabb does not teach, mention or suggest a sensing layer that transmits balance information signals of two-dimensional force distribution to a remote location; a signal processing subsystem that, in response thereto, generates balance control signals for use in user skin stimulation; and an array of stimulators that are adapted to provide skin stimulation to at least one lower extremity in a form reflecting the two-dimensional force distribution under the user's foot.

Accordingly, the Applicants respectfully assert that the claims 6, 7, and 9 satisfy 35 U.S.C. § 101, et seq. -- especially § 103(a) -- and are in condition for allowance. Withdrawal of the grounds for rejection is respectfully requested.

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The Examiner is encouraged to telephone the undersigned attorney to discuss any matter that would expedite allowance of the present application.

Respectfully submitted,

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